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Please find below and/or attached an Office communication concerning this application or proceeding.

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Application Number: 09/848,430
Filing Date: May 04, 2001
Appellant(s): KREULEN ET AL.

MAILED

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Technology Center 2100

Frederick E. Cooperrider, Esq.
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 29 November 2005 appealing from

the Office action mailed 29 June 2005

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,895,470	PIROLLI	4-1999
2002/0165707 A1	CALL	11-2002
5,950,19	COHEN	9-1999
6,401,088 B1	JAGADISH	6-2002

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 5, 9, 13, and 15 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Pirolli (U.S. Patent 5,895,470) in view of Call (U.S. Publication

2002/0165707 A1).

As per claims 5, 9, and 13, Pirolli discloses an apparatus, program instructions

and method of converting, organizing, and representing in a computer memory a

document corpus containing an ordered number of documents (See Pirolli, Column 7,

lines 35-39). Pirolli does not disclose expressly developing a first uninterrupted listing of

integers to correspond to an occurrence of terms in the document corpus. Call discloses

developing an uninterrupted array of integers corresponding to an occurrence of terms

(See Call, Figure 1, element 135, and Page 3, paragraph 0029). Pirolli and Call are

analogous art because they are from the same field of endeavor of processing

electronic text data. At the time of the invention it would have been obvious to a person

of ordinary skill in the art to include the array of integers corresponding to an occurrence

of terms of Call with the method of Pirolli. The motivation for doing so would have been

to permit more efficient execution of processing functions of the type typically performed

by data processors (See Call, Page 1, paragraph 0010). Therefore, it would have been

obvious to combine Call with Pirolli for the benefit of permitting more efficient execution

of processing functions of the type typically performed by data processors to obtain the

invention as specified in claims 5, 9, and 13.

As per claim 15, Pirolli discloses data converter for organizing and representing

in a computer memory a document corpus containing an ordered number of documents,

for use by a data mining applications program requiring occurrence-of-terms data (See

Pirolli, Column 13, lines 18-46), the representation to be based on terms in a dictionary

previously developed for the document corpus and where each term in the dictionary

has associated therewith a corresponding unique integer (See Pirolli, Pages 6-7,

paragraphs 0076-0083).). Pirolli also discloses means for developing an uninterrupted

listing of the unique integers to correspond to the occurrence of the dictionary terms in

the document corpus (See Pirolli, Column 7, lines 33-62). Pirolli does not disclose

expressly developing an uninterrupted listing of integers to correspond to an occurrence

of dictionary terms in the document corpus. Call discloses developing an uninterrupted

array of integers corresponding to an occurrence of terms (See Call, Figure 1, element

135, and Page 3, paragraph 0029). Pirolli and Call are analogous art because they are

from the same field of endeavor of processing electronic text data. At the time of the

invention it would have been obvious to a person of ordinary skill in the art to include the

array of integers corresponding to an occurrence of terms of Call with the method of

Pirolli. The motivation for doing so would have been to permit more efficient execution

of processing functions of the type typically performed by data processors (See Call,

Page 1, paragraph 0010). Therefore, it would have been obvious to combine Call with

Pirolli for the benefit of permitting more efficient execution of processing functions of the

type typically performed by data processors to obtain the invention as specified in claim

15.

As per claim 1, Pirolli discloses method of converting a document corpus

containing an ordered number of documents into a compact representation in memory

of occurrence data (See Pirolli, Column 7, lines 35-39). Pirolli does not disclose

expressly developing a first vector for the entire document corpus, the first vector being

a listing of integers corresponding to terms in the documents such that each document

in the document corpus is sequentially represented in the listing. Call discloses

developing an uninterrupted array of integers corresponding to an occurrence of terms

(See Call, Figure 1, element 135, and Page 3, paragraph 0029). Pirolli and Call are

analogous art because they are from the same field of endeavor of processing

electronic text data. At the time of the invention it would have been obvious to a person

of ordinary skill in the art to include the array of integers corresponding to an occurrence

of terms of Call with the method of Pirolli. The motivation for doing so would have been

to permit more efficient execution of processing functions of the type typically performed

by data processors (See Call, Page 1, paragraph 0010). Therefore, it would have been

obvious to combine Call with Pirolli for the benefit of permitting more efficient execution

of processing functions of the type typically performed by data processors to obtain the

invention as specified in claim 1.

As per claim 17, Pirolli and Call disclose the limitations of claim 15 as described

above. Pirolli also discloses developing an uninterrupted listing for the entire document

corpus, the uninterrupted listing containing, in sequence, the location of each

corresponding document in the first uninterrupted listing (See Pirolli, Page 5, paragraph

0051).

As per claims 3, 7, and 11, Pirolli and Call disclose the limitations of claims 1, 5,

and 9 as described above. Call also discloses rearranging, or sorting, in the first vector,

the order of the unique integers within the data for each document so that the terms are

in alphabetical order which would case all identical unique integers to be adjacent (See

Call, Page 5, paragraph 0051). Pirolli and Call are analogous art because they are from

the same field of endeavor of processing electronic text data. At the time of the

invention it would have been obvious to a person of ordinary skill in the art to include the

sorting of terms of Call with the method of Pirolli and Call. The motivation for doing so

would have been to allow the terms to be displayed in sorted order (See Call, Page 5, paragraph 0051). Therefore, it would have been obvious to combine Call with Pirolli and Call for the benefit of allowing the terms to be displayed in sorted order to obtain the invention as specified in claims 3, 7, and 11.

As per claims 18, 20, 22, and 24, Pirolli and Call disclose the limitations of claims 1, 5, 9 and 13 as described above. Call also discloses developing a dictionary, or term table, including terms contained in the document corpus and associating with each dictionary term, an integer to be uniquely corresponding to the dictionary term, the uniquely corresponding integers used in the first uninterrupted listing (See Call, Pages 6-7, paragraphs 0076-0083). Pirolli and Call are analogous art because they are from the same field of endeavor of processing electronic text data. At the time of the invention it would have been obvious to a person of ordinary skill in the art to include the term table of Call with the method of Pirolli and Call. The motivation for doing so would have been to allow a user to search the text for a term matching a particular term (See Call, Page 7, paragraph 0082). Therefore, it would have been obvious to combine Call with Pirolli and Call for the benefit of allowing a user to search the text for a term matching a particular term to obtain the invention as specified in claims 18, 20, 22, and 24.

As per claims 19, 21, 23 and 25, Pirolli and Call disclose the limitations of claims 1, 5, 9 and 13 as described above. Pirolli also discloses developing a second uninterrupted listing for the entire document corpus, the second uninterrupted listing

containing, in sequence, the location of each corresponding document in the first

uninterrupted listing (See Pirolli, Column 7, lines 33-62).

Claims 2, 6, 10, 14, and 16 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Pirolli (U.S. Patent 5,895,470) in view of Call (U.S. Publication

2002/0165707 A1) as applied to claims 15, 19, 21, 23, and 25 above, and further in

view of Cohen (U.S. Patent 5,950,189).

As per claims 2, 6, 10, 14, and 16, Pirolli and Call disclose the limitations of

claims 15, 19, 21, 23, and 25 as described above. Pirolli and Call do not disclose

expressly developing a third uninterrupted listing for the entire document corpus, the

third uninterrupted listing containing a sequential listing of floating point multipliers, each

floating point multiplier representing a document normalization factor for a

corresponding document in the document corpus. Cohen discloses developing a

normalized vector containing floating point multipliers (See Cohen, Column 11, lines 1-

39). Pirolli, Call and Cohen are analogous art because they are from the same field of

endeavor of processing electronic text data. At the time of the invention it would have

been obvious to a person of ordinary skill in the art to include the normalized vectors of

Cohen with the method of Pirolli and Call. The motivation for doing so would have been

to accurately identify the high matches of document terms and their values (See Cohen,

Column 9, lines 28-30). Therefore, it would have been obvious to combine Cohen with

Pirolli and Call for the benefit of accurately identifying the high matches of document

terms and their values to obtain the invention as specified in claims 2, 6, 10, 14 and 16.

Claims 4, 8, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pirolli (U.S. Patent 5,895,470) in view of Call (U.S. Publication 2002/0165707 A1) and Cohen (U.S. Patent 5,950,189) as applied to claims 2, 6, and 10 above, and further in view of Jagadish (U.S. Patent 6,401,088 B1).

As per claims 4, 8, and 12, Pirolli, Call and Cohen disclose the limitations of claims 2, 6, and 10 as described above. Pirolli, Call and Cohen do not disclose expressly that the normalization factor is the number of occurrences of a specific term in the document that represents the reciprocal of the square root of the sum of squares of all term occurrences in the document. Jagadish discloses calculating a normalization factor using an algorithm that can be refined to determine the number of term occurrences in a document (See Jagadish, Figure 6, and Column 8, lines 14-46). Pirolli, Call, Cohen and Jagadish are analogous art because they are from the same field of endeavor of processing electronic text data. At the time of the invention it would have been obvious to a person of ordinary skill in the art to include the normalization factor of Jagadish with the method of Pirolli, Call and Cohen. The motivation for doing so would have been to obtain a quick estimate of the number of times a particular substring, or term, occurs (See Jagadish, Column 1, lines 23-24). Therefore, it would have been obvious to combine Jagadish with Pirolli, Call and Cohen for the benefit of obtaining a quick estimate of the number of times a particular substring, or term, occurs to obtain the invention as specified in claims 4, 8 and 12.

(10) Response to Argument

Beginning on page 5 of the appeal brief (hereinafter the brief), Appellant argues the

following issues, which are accordingly addressed below.

Appellant argues on Pages 5-9 of the brief that Pirolli in combination with

Call fails to teach a document corpus having a precisely defined _order_ of

documents.

The Office respectfully disagrees. The plain meaning of an "order" as defined in

The American Heritage College Dictionary is "a condition of logical or comprehensible

arrangement among the separate elements of a group (See The American Heritage

College Dictionary, Page 979, definition of "order", Exhibit A attached). Pirolli teaches

a system for categorizing documents in a linked collection of documents (See Pirolli,

Abstract). Pirolli's linked document collection is represented in reference to web pages

forming a website, such as those found of the World Wide Web (See Pirolli, Column 1,

lines 65-67, and Column 2, lines 1-7). As is known in the art, a website contains a

home page, which frequently serves as a table of contents, with links to various

subsequent pages based upon content (See Microsoft Computer Dictionary, Third

Edition, Page 506, definition of "website", Exhibit B attached). It would have been

obvious to one of ordinary skill in the art at the time of the invention to define a website,

such as taught by Pirolli, as a collection of documents, or web pages, having a

precisely-defined order by virtue of their structure having a home or main page and

subsequent pages linked based on content. As such, the Office maintains that a website as taught by Pirolli is indicative of a document corpus having a precisely defined order of documents.

Appellant's argues on Page 11 of the brief that the combination of Call with Pirolli is improper.

The Office respectfully disagrees. The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

Appellant's argues on Pages 9-13 of the brief that Pirolli and Call are nonanalogous art.

The Office respectfully disagrees. It has been held that a prior art reference must either be in the field of Appellant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the Applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Call and Pirolli are from the same field of endeavor of extracting and analyzing information from electronic documents (See Pirolli, Abstract, lines 1-9, and Call, Abstract, lines 1-14).

Appellant argues on Pages 14-15 of the brief that Pirolli in combination with Call and Cohen fail to teach normalization indicating similarity within a document.

The Office respectfully disagrees. Appellant notes that Cohen teaches normalization indicating similarity between two documents, as stated on Page 4 of the brief. The Office maintains that the teachings of Cohen as applied to normalization between multiple documents would have provided the suggestion to one of ordinary skill in the art at the time of the invention to apply the same teachings within a single document. The Office recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation would have been to accurately identify the number of matches of document terms within a document and the values of said terms (See Cohen, Column 9, lines 28-30).

Appellant's arguments with respect to claims 3-4, 7-8, and 11-12 have been fully considered and are persuasive.

The rejection of claims 3-4, 7-8, and 11-12 has been withdrawn, however, claims 3-4, 7-8, and 11-12 are objected to as being dependent upon rejected base claims.
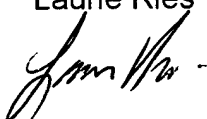
(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the

Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.
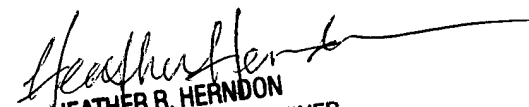
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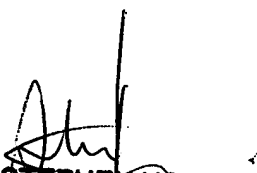
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